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of discovering the true religion, but for the purpose of discovering the history of religious opinions. If we use the writings of antiquity in this spirit the records of the past are of priceless value for the lessons of history which they teach. Let us call this the Scripture Book.

Modern history resorts to the Stone Book, the Ruin Book, the Tomb Book, the Folk Book and the Scripture Book for the materials to be used in discovering and formulating the development of the industries, pleasures, languages, institutions and opinions of mankind.

The present generation has inherited all the labors of the past. The culture of the day is but a slight modification of the culture of the last generation, and that was derived from the antecedent generation; so all the generations have wrought for us, and our culture is the product of their labor and invention. Every generation has added its minute increment, and hence there has been progress. We cannot dis sever our life from that of the past. We inherit its arts and improve them a little; we inherit its pleasures and make but a slight change; we inherit its speech and improve our expression only to a slight degree; we inherit its institutions and modify the forms of justice only in small particulars, and we inherit its opinions and entertain new ideas only as we have discovered a few new facts. So we are indebted to the dead for that which we are, and are governed by the dead in all our activities. Yet the past is not a pall on the present, hiding the truth, but a searchlight that may be turned on the future. The past is not a tyranny on the present, but an informing energy which evolves through us that the future may be improved. Science endeavors to guide the way by a study of the past and to conserve and direct our energies in a legitimate course of development. The past is the

chart of the future; if misread it is a false guide, if correctly read the way is clear. It is thus that the five volumes of the pilot book of life are of profound importance.

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UNITY OF NOMENCLATURE IN ZOÖLOGY AND BOTANY.

SYSTEMATIC biologists have reason to rejoice at the appearance of the completed list of ferns and flowering plants of northeastern North America,* on which a committee of leading botanists has been engaged for the past two or three years. Following the example set by American ornithologists in 1883, a number of prominent botanists determined to sink individual preferences for the sake of that much sought goal—uniformity and stability in the names of genera and species. In 1892, therefore, a committee was appointed by the Botanical Club of the American Association for the Advancement of Science, comprising N. L. Britton, J. M. Coulter, H. M. Rusby, W. A. Kellerman, F. V. Coville, Lucien M. Underwood and Lester F. Ward; and was afterward increased by the addition of Edward L. Greene and William Trelease.† Although the De Candolle or Paris Code of 1867 is the alleged basis of departure, it is evident at a glance that nearly every important rule is borrowed direct from the American Ornithologists' Union Code of Nomenclature.

* List of Pteridophyta and Spermatophyta growing without cultivation in Northeastern North America. Prepared by a Committee of the Botanical Club, American Association for the Advancement of Science. (From Memoirs Torrey Botanical Club.) New York, 1893-1894. [Also issued in dated signatures, as published, during 1883 and 1884.]

† In addition to the members of the committee the following botanists have contributed special parts to the 'List': L. H. Bailey, T. H. Kearney, Jr., Thomas Morong, F. Lamson-Scribner, John K. Small, J. G. Smith and Wm. E. Wheelock.

ture, published in 1886. The latter code has been already adopted, not only by ornithologists, but also by leading mammalogists, paleontologists, herpetologists and ichthyologists, and its essential features have been accepted by many prominent entomologists and other writers on invertebrates. It is a matter for special congratulation, therefore, that the botanists have 'fallen into line' so that, for the first time, the naturalists of a great continent are in substantial accord on the main points involved in the nomenclature of genera and species. Better still, the agreement is by no means confined to America, for many of the more progressive naturalists of the Old World have already accepted the same guiding principles.

These principles, as applied in the work under consideration, may be briefly stated as follows: (1) Priority of publication the fundamental principle of nomenclature; (2) Botanical nomenclature to begin with 1753, the date of the first edition of Linnæus's *Species Plantarum*; (3) Original specific name to be retained without regard to generic name; (4) A name once a synonym always a synonym; (5) Original name retained 'whether published as species, subspecies or variety'; (6) Varieties [subspecies] written as trinomials; (7) Double citation of authorities.

The well printed volume is not wholly above criticism. One is surprised to find that the original spelling of generic names has been violated—as *Buettneria* for *Butneria* (p. 163), *Gleditschia* for *Gledetsia* (p. 192), and so on. The retention of capitals in certain specific names is also to be regretted. A word of explanation respecting the synonymy, and also a more explicit statement as to the exact scope of the 'List', would have been acceptable. But these matters are trivial compared with the obvious merits of the work.

C. HART MERRIAM.

SCIENTIFIC LITERATURE.

CAN AN ORGANISM WITHOUT A MOTHER BE BORN FROM AN EGG?

1. *Ein geschlechtliche erzeugter Organismus ohne mütterliche Eigenschaften.*—BOVERI.—*Berichte d. Gesellsch. f. Morph. u. Phys. zu München*, 1889.
2. *Giebt es geschlechtliche erzeugte Organismen ohne mütterliche Eigenschaften.*—SEELIGER.—*Arch. f. Entwicklungsmechanik*, I., 2, 1894.

In 1889 Boveri gave an account of certain experiments which seemed to him to prove that a denucleated fragment of the egg of one species of sea-urchin may be fertilized by a spermetazoon from another species, and that it develops into a larva with none of the characteristics of the species which supplied the egg, but exactly like, though smaller than, the normal larvæ of the species which supplied the spermetazoon. He believes that his experiments demonstrate the law that the nucleus alone is the bearer of hereditary qualities; that with the removal of the maternal nucleus are removed at the same time the maternal hereditary tendencies of the egg, and that while the maternal protoplasm furnishes a large share of the material for the production of the new organism, it is without influence on the form of this organism.

This paper was welcomed with great enthusiasm as a contribution of the utmost value to the solution of the problem of inheritance, although careful study of it, or of the translation which was published in the *American Naturalist* for March, 1893, will show that Boveri's evidence for his belief is not direct but very circumstantial.

Seeliger has repeated Boveri's experiments with great care, and on a much more extensive scale, and he shows that the indirect evidence, upon which Boveri bases his belief that the larvæ in question were born